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THE UNIVERSITY OF ALBERTA

ECONOMIC UNDERSTANDING OF  
GRADE TWELVE STUDENTS

by

Morris Wilfred Campbell

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE  
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DEPARTMENT OF SECONDARY EDUCATION

EDMONTON, ALBERTA

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## THE UNIVERSITY OF ALBERTA

## FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Measurement of Economic Understanding of Grade Twelve Students", submitted by Morris Wilfred Campbell in partial fulfilment of the requirements for the degree of Master of Education.





## ABSTRACT

Economic changes in society in recent years have resulted in questions about the inclusion of economics in the high school program. While many factors are involved in the economic understanding which high school students hold, the purpose of this study is to investigate the effects of sex, socio-economic background, intelligence, and a course in economics on the economic understanding of high school students.

The population of the study is the grade twelve students enrolled in the public school system of Regina in May, 1964.

The Test of Economic Understanding scores of the students without an economics course were classified by the student's sex, level of socio-economic status, and mental ability group. The hypotheses on the effect and interaction of these factors were tested using a three-way analysis of variance. The results found were that sex, socio-economic status, and intelligence affected significantly students' scores on the Test of Economic Understanding. An interaction between the factors of sex and socio-economic status was found.

The Test of Economic Understanding scores of students with an economic course were compared with an equal number of scores of a randomly selected group of students without an economics course. The hypothesis on the effect of an economics course on the economic understanding of students was tested with the analysis of covariance. Scores of the economic students were found to be significantly higher than the scores of non-economic students when the mean scores were adjusted for







the factors of socio-economic status and intelligence.

The conclusions of this study are that male students have more understanding of economic concepts than do female students, that students' understanding of economic concepts relates to their socio-economic background, that students' understanding of economic concepts relates directly to their intelligence, and that students with a course in economics have a better understanding of economic concepts than those students without an economics course.





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## CHAPTER I

### STATEMENT OF THE PROBLEM

In recent years questions have arisen regarding economic education in the high schools. Should economics be taught in the high schools? What effects do various courses have on economic understanding? What factors affect basic economic concepts held by high school students?

This study was designed to investigate some of the factors which might affect the economic understanding of senior high school students. Measured economic understanding of grade twelve students was considered in relation to the factors of sex, socio-economic background, intelligence, and a specific course in high school economics.

### THE NEED FOR THE STUDY

Recent scientific and technological changes in society in the past few decades have placed increasing responsibility for making decisions of an economic nature on the individual. The gap between the producer and the consumer has increased as business organizations have become more complex. Government today must provide more services as a result of demands of society. International boundaries have a new dimension with travel and trade taking new forms. The welfare of the nation and that of the individual rests on the economic decisions of the individual citizen.

Many questions on economic education arise as a result of the changes in society. Has economic education kept pace with the times?





Are the youth of the nation being given the opportunity to develop economic understanding? Who is responsible for providing economic education? Do the youth today gain such understanding in their homes? Have our school graduates the capacity to make reasoned judgements or wise decisions in the economic market? Can high school courses affect these understandings? Are understandings related to factors of background or general ability?

While much has been written on economic education in secondary schools, little research has been undertaken in this area. Seagoe states, ". . . to look for specific studies of learning in the field of economic education is equally fruitless, for they are rare and present so many variables that it is difficult to reach a clear conclusion."<sup>1</sup>

The purpose of this study was to investigate the effect of sex, socio-economic background, intelligence, and a course in economics on economic understanding of high school students.

#### ECONOMIC EDUCATION IN SECONDARY SCHOOLS

In the United States the inclusion and grade placement of economics in secondary school programs have varied. In 1894 the Committee of Ten of the National Education Association recommended that economics be included with a course of civics and history.<sup>2</sup> The

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<sup>1</sup>May V. Seagoe, "Principles of Learning and Teaching Applied to Economics," Educating Youth for Economic Competence, The American Business Education Yearbook, Vol. XV-1958 (Somerville, New Jersey: Somerset Press, 1958), p. 241.

<sup>2</sup>G. Derwood Baker, "Educating Citizens for Economic Effectiveness, 1960-1980," Citizenship and a Free Society: Education for the Future, National Council for the Social Studies, Thirtieth Yearbook (Washington: National Education Association, 1960), p. 123.



National Education Association in 1901 recommended that economics be taught as a separate subject. In the period from 1900 to 1920 economics gained general acceptance and was offered as a grade twelve elective in many school systems.<sup>3</sup> In the period following 1930 attention to the subject of economics declined. A survey reported in 1951 by the Brookings Institute found that less than 5 per cent of high school students studied any course in economics.<sup>4</sup>

In the past fifteen years considerable attention has been given to economic education. National organizations, aware of the need for economic education, have held conferences and published material on this topic. The National Council for the Social Studies published in their thirtieth yearbook several chapters on economics.<sup>5</sup> In this book Baker cites the concern for economic education by quoting from the Council for the Advancement of Secondary Education the following:

. . . Economics concerns all of us. It plays a dominant role in our affairs, affecting our lives at every hour. All of us alike, workers and managers, producers and consumers, businessmen and investors, need to be equipped to function effectively in this economic society. The purposes of economic education may properly be to provide the individual with such a grasp of basic concepts and principles as will enable him to understand, appreciate, and

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<sup>3</sup>Harold Cummings, "Economic Education in the Secondary Schools," Journal of Educational Sociology, 23:398, 1950.

<sup>4</sup>C. W. McKee and H. G. Moulton, A Survey of Economic Education, (The Brookings Institution, Washington, 1951), cited by G. Derwood Baker, The Business Educator's Responsibility for Economic Education, Tenth Annual Delta Pi Epsilon Lecture (Cincinnati, Ohio: South-Western Publishing Company, 1951), p. 11.

<sup>5</sup>Franklin Patterson (ed.), Citizenship and a Free Society: Education for the Future, National Council for the Social Studies, Thirtieth Yearbook (Washington: National Education Association, 1960).





seek to improve that economy, the benefits of which he shares, to vote intelligently on economic questions, and to use his knowledge for his own and the social good. . . . .<sup>6</sup>

In reporting on a conference held in 1960 by the National Education Association and the United Business Education Association, Olson and Swearingen indicated the need for economic education in secondary schools as this:

The health and well-being of our democratic society is becoming more and more dependent upon the understanding by its citizens of the nature of business and economic processes by which it lives, and indeed, survives. A knowledge of the principles underlying the operation of our economic life is necessary for an ever-increasing number of the population and must no longer be confined to the few individuals who in the past were enrolled in the economic courses at the college level.<sup>7</sup>

The Educational Policies Commission of the National Education Association in 1938 set out economic efficiency as one of the major objectives of education. A recent statement by the Policies Commission for Business and Economic Education stated the need as this:

We believe it is imperative that every American should have as a part of his general education, . . . an opportunity to become competent to deal with everyday business economic issues and problems.<sup>8</sup>

In addition to these national organizations in education,

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<sup>6</sup>Economics in the Press: A Survey of Magazines and Newspapers for Economic Terms, (Washington: Council for Advancement of Secondary Education, 1956), pp. 1-2,3, cited by G. Derwood Baker, op. cit., p. 119.

<sup>7</sup>Milton C. Olson and Eugene L. Swearingen (eds.), Business and Economic Education for the Academically Talented Student (Washington: National Education Association, 1961), p. 11.

<sup>8</sup>A Proposal for Business-Economic Education for American Secondary Schools, Policies Commission for Business and Economic Education (Washington: National Education Association).





numerous foundations and associations have been established with the prime purpose of furthering economic education. The Joint Council of Economic Education, as one of these, has not only prepared outlines, courses, and materials to assist teachers in presenting economics, but has held conferences and workshops in the United States.

In Canada the same concern for economic education is noticeable. The Canadian Economic Foundation, formed only in 1962, has published a booklet aimed directly at informing people of basic economic concepts.<sup>9</sup> Economic concepts are included in social studies courses in high schools in Canada. In the Province of Saskatchewan economics is an elective subject at the grade twelve level while the social studies course is a required subject for all students in each of the high school grades. A course in grade nine or ten business fundamentals also contains some basic economic concepts.

While "the central purpose of the social studies is to promote the growth of informed individuals and responsible citizens," the objectives do not make any specific reference to economic understandings.<sup>10</sup> The general objective of the course is to promote understanding of how the present has grown out of the past. Economic concepts could be included in the specific objectives of this course where broader statements are made, such as, "preserving democratic government"

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<sup>9</sup>Fred G. Clark and Richard Stanton Rimanoczy, How We Live in Canada (Toronto: Canadian Economic Foundation, 1963).

<sup>10</sup>Department of Education, Government of the Province of Saskatchewan, Program of Studies for the High School, Social Studies Grade XII (Regina: Queen's Printer, 1963), p. 5.



and "understanding community, national, and world problems."<sup>11</sup>

In the grade nine, ten, and eleven social studies programs in the Province of Saskatchewan, economic factors appear only as minor parts of other topics and only in a few units.<sup>12,13,14</sup> An example in the grade eleven course is the inclusion of the presentation of the growth of trade unions as part of the political developments of the nineteenth century.<sup>15</sup>

The grade twelve social studies course in the Province of Saskatchewan is listed as Canadian history. No main topics of this course refer to economic development. Topics on rising prices, the depression, and growth of labor organizations are included under the developments of the nation in this century. The unit on Canadian problems includes a section on the forms of business organization and optional sections on transportation and labor relations.<sup>16</sup>

While the economics course is an elective for grade twelve in

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<sup>11</sup>Department of Education, Social Studies Grade XII, loc. cit.

<sup>12</sup>Department of Education, Government of the Province of Saskatchewan, Program of Studies for the High School, Social Studies Grade IX (Regina: Queen's Printer, 1960).

<sup>13</sup>Department of Education, Government of the Province of Saskatchewan, Program of Studies for the High School, Social Studies Grade X (Regina: Queen's Printer, 1961).

<sup>14</sup>Department of Education, Government of the Province of Saskatchewan, Program of Studies for the High School, Social Studies Grade XI (Regina: Queen's Printer, 1962).

<sup>15</sup>Department of Education, Social Studies for Grade XI, op. cit., p. 13.

<sup>16</sup>Department of Education, Social Studies for Grade XII, op. cit., p. 12-15.





the Province of Saskatchewan, it has recently received recognition as a university entrance option.<sup>17</sup> Textbooks presently authorized for the course by the Department of Education are either Our Economic Life<sup>18</sup> or Economics for Canadians.<sup>19</sup> The Department of Education bulletin states the main objectives of this course as follows:

To describe the main features and problems of the Canadian economy, with an emphasis on the economic problems of Western Canada;

To enrich the Grade XII course in Social Studies;

To provide the information which has utility for vocational guidance;

To assist in the development of mature, responsible Canadian citizens;

To introduce elements of economic theory as a means of studying and interpreting our system and others like and unlike it;

To develop skill in reading and interpreting economic tables, charts, and graphs.<sup>20</sup>

The outline of the Grade XII Economics course includes the following sections:

1. Economics--definition and importance
2. National Income and Economic Welfare
3. The Economic System
4. Forms of Business Organization

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<sup>17</sup>Department of Education, Saskatchewan, Circular Relative to Textbooks for Elementary and High Schools, Effective July, 1963 (Department of Education, Saskatchewan, 1963), p. 22.

<sup>18</sup>A. G. Steinberg, Our Economic Life, rev. ed. (Toronto: Sir Issac Pitman and Sons (Cnaada) Ltd., 1960).

<sup>19</sup>Helen Buckley and Kenneth Buckley, Economics for Canadians (Toronto: The MacMillan Co. of Canada Ltd., 1960).

<sup>20</sup>Department of Education, Curriculum Branch, Province of Saskatchewan, "Grade XII Economics" (Regina: Department of Education, 1961).





5. Labor Organization
6. Family Income and Expenditures
7. A Bird's-Eye View of the Canadian Economy
8. Changes in Income and Employment
9. Money and Credit
10. The Banking System
11. The Changing Price Level
12. The Theory of Price in Commodity Market: Pure Competition
14. Prices for the Factors of Production
15. The International Economy
16. Government and the Economic System
17. Alternative Economic Systems.<sup>21</sup>

In the economics classes involved in this study the alternative textbook by Steinberg was used. The textbook is divided into six chapters which are as follows:

1. Introduction to Economics
2. The Productive Process
3. Exchange
4. The Distributive Process
5. Consumption of Goods
6. Government and Economic Life.<sup>22</sup>

While the grade twelve economics course is now an elective for any student in the Province of Saskatchewan it has been selected mainly by students who are in a business pattern and so only a very small number of students are enrolled in this subject.

The business fundamentals course taught in either grade nine or ten in the Province of Saskatchewan is of a general nature and is used as an introductory course for business students or for those not in a university entrance program. The prescribed textbook is Business

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<sup>21</sup>Ibid., pp. 2-6.

<sup>22</sup>Steinberg, loc. cit.



Fundamentals.<sup>23</sup> Sections on banking, savings and investment, trade and marketing, government, and our economic systems, are included. This is a basic elementary course and is not a substitute for economics. The number of grade nine and ten students enrolled in this course is small and many of the students leave school prior to grade twelve.

It would appear that there is agreement by educators that economics is essential in secondary education today. Organizations have published economic concepts which they feel should be taught to high school students. The economic understandings needed for responsible citizenship and effective participation in today's complex economy were set out by the National Task Force on Economic Education under the following headings:

The Fact of Scarcity

Economic Systems--The Big Economic Problems

How the Economic System Uses Productive Resources in Satisfying Competing Wants

An overview of the way the system allocates resources  
Some important facts and concepts concerning resource use  
The role of incentives, competition, and markets  
Modern business, economic concentration, and monopoly  
Government and the allocation of resources--taxes and government spending  
International allocation of resources--International trade

Economic Growth and Stability

The importance of economic growth and stability  
Measures of national income and production  
Main forces determining national production and income

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<sup>23</sup>Graham Bruce, Robert H. Heywood and William T. Abercrombie, Business Fundamentals, rev. ed. (Toronto: McGraw-Hill Co. of Canada Ltd., 1961).





The role of government budgets (expenditures, taxes and borrowing)

The banking and monetary system

The problem of economic growth

Growth and the underdeveloped economies

#### The Distribution of Income

Personal distribution of income in the United States

Labor, wages, and labor unions

Farm incomes--the "Farm Problem"

The desire for economic security

#### Communism, Socialism, and Capitalism.<sup>24</sup>

A monograph reviews the study conducted by Overman in which the problem was "to survey the economic education activities of leading companies and private organizations and to determine the facts, concepts, or viewpoints about the American business system which business executives considered of such major importance that they should be included in the knowledge of all individuals."<sup>25</sup> This monograph outlines fifty concepts which were submitted to the executives of business firms. Each of the fifty concepts was considered to be of major importance by a majority of businessmen.

#### HYPOTHESES

The population to which the null hypotheses pertain was the grade twelve students enrolled in the Regina public school system in the

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<sup>24</sup>Economic Education in the Schools, Report of the National Task Force on Economic Education (New York: Committee for Economic Development, 1961), pp. 3-4.

<sup>25</sup>Glenn D. Overman, Economic Concepts Everyone Should Know, Monograph 95 (Cincinnati: South-Western Publishing Company, 1954), p. 37.





spring of 1964.

1. There is no significant difference in measured economic understanding of male and female students.
2. There is no significant difference in measured economic understanding of students of high, average, or low socio-economic levels.
3. There is no significant difference in measured economic understanding of students with high, average, or low intelligence.
4. There is no interaction on the students scores of measured economic understanding (1) between sexes and socio-economic levels; (2) between sexes and ability groups; (3) between socio-economic levels and ability groups; (4) among sexes, socio-economic levels, and ability groups.
5. There is no significant difference between the measured economic understanding of students with a course in economics and those without a course, when adjustment is made for ability and socio-economic background.

#### DELIMITATIONS

Although many factors may have an effect on economic understandings, this study considered only the factors of sex, socio-economic background, intelligence, and an economics course. It did not consider the specific economic concepts which are presented in existing courses, the methodology, or the teachers' training and qualifications.



## DEFINITION OF TERMS

Economic Understanding. A knowledge of basic economic facts, their meanings, and their interrelation.

Intelligence. Mental ability, which is the product of genetic endowment and experience. Potential capabilities are estimated by use of various intelligence tests.

Socio-economic Status. The ranking of individuals in social levels determined by occupation, income, education, and place of residence.

Economics Course. A high school course at the grade twelve level in economics which is taught as a separate subject in the Province of Saskatchewan.

Economic Students. The grade twelve students enrolled in economics.

Non-economic Students. The grade twelve students not enrolled in economics.





## CHAPTER II

### REVIEW OF LITERATURE

In the present study of economic understanding of grade twelve students, the factors of sex, socio-economic status, and intelligence are considered. Literature pertaining to socio-economic status and intelligence will be reviewed to provide a rationale for the procedures selected to measure these factors.

In the second part of this chapter, literature pertaining to measurement of economic concepts and economic education is reviewed. Reference is made only to research studies in this area.

### SOCIO-ECONOMIC STATUS AND INTELLIGENCE

In considering socio-economic status, the concepts of social stratification and social class are important. Various approaches to these concepts have been used. These concepts were referred to by Aristotle when he divided the population into three groups--very rich, very poor, and the mean.<sup>1</sup> The Marxian theory on stratification placed emphasis on positions in society in relation to production. Social class in the Marxian view was based directly on economic or occupational position.<sup>2</sup>

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<sup>1</sup>Aristotle, "Social Classes: A Classic View," in Class, Status and Power, Bendix and Lipset (eds.) (New York: Free Press of Glencoe, 1953), P. 17.

<sup>2</sup>Reinhard Bendix and Seymour Martin Lipset, "Karl Marx' Theory of Social Class," in Class, Status and Power, Bendix and Lipset (eds.) (New York: Free Press of Glencoe, 1953), Pp. 26-34.





Three kinds of indicators of social stratification positions were described by Barber as: (1) how people evaluate one another; (2) how people associate with one another; and (3) the material possessions and symbolic activities displayed by people. Barber states that intensive work has been done recently to construct indices as standardized, reliable, scalar, and economical indicators of social positions. In reviewing various indices, Barber noted that single-item indices, particularly occupational scales, are commonly used, but multiple-item indices tend to increase the validity of the measure.<sup>3</sup>

Caplow placed occupations as an important factor in determining prestige and social privileges in society. In a chapter on the measurement of occupational status, he reviewed occupational scales that had been developed, and divided them into three groups: socio-economic, psychometric, and prestige. Caplow stated that there is much disagreement as to the ranking of occupations, and that the use of certain scales will produce contradictory results. Caplow hypothesized that a single occupational scale for measurement of prestige, skill, intelligence, and social position is impossible.<sup>4</sup>

Centers indicated the necessity of distinguishing between social strata and social class and arrived at what was described as the interest group theory. This "theory implies that a person's status and role with respect to economic processes of society impose on him

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<sup>3</sup>Bernard Barber, Social Stratification (New York: Harcourt, Brace, and Company, 1957).

<sup>4</sup>Theodore Caplow, The Sociology of Work (Minneapolis: University of Minnesota Press, 1954).



certain attitudes, values, and interests related to his role."<sup>5</sup>

Centers stated that, "class and occupation are closely interrelated, but it is a mistake to class all professionals at the top and workers at the bottom, for too many factors contribute to a person's social status for such an arbitrary ranking to be exact and accurate."<sup>6</sup>

Warner used two systems in the measurement of social classes.<sup>7</sup> The first was the evaluated participation (E.P.) method based on the proposition that those who interact in the social system evaluate the participation of those around them and that members are aware of the ranking. The second was referred to as the Index of Status Characteristics (I.S.C.) which measured the socio-economic level and related this to class concepts. The latter consisted of four areas which were weighted to provide an index for individuals. Two criticisms of the Warner approach, as stated in a review by Kornhauser, were that emphasis was given primarily to the prestige factor and that peoples' opinions were not a substitute for rigorous conceptual distinctions.<sup>8</sup>

Gough, in developing the Home Index Scale as a social status inventory, reviewed other scales. He stated that the Chapin scale

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<sup>5</sup>Richard Centers, The Psychology of Social Classes (Princeton, New Jersey: Princeton University Press, 1954), p. 207.

<sup>6</sup>Ibid., p. 229.

<sup>7</sup>Lloyd W. Warner, Marchia Meeker, and Kenneth Eells, Social Class in America (Gloucester, Massachusetts: Peter Smith, 1957).

<sup>8</sup>Ruth Rosner Kornhauser, "The Warner Approach to Social Stratification," in Class, Status and Power, Bendix and Lipset (eds.) (New York: Free Press of Glencoe, 1953), pp. 224-254.





required rating by a home visitor, that the Barr, Taussig, and Goodenough scales placed emphasis on occupations, and that the Sims and the American Home Index required respondents to supply answers about their homes. While Gough indicated that these scales provided reasonably adequate measures, the device Gough developed provided a self-administered inventory.<sup>9</sup>

In developing an instrument, Hollingshead selected three factors presented by others. He based his index of social position on where the family lives, how it makes its living, and how it spends leisure time. Each of these three sections was measured on separate scales and then combined using a weighted ratio.<sup>10</sup>

In Canada the scale developed by Blishen has been used by a number of researchers in recent years. This scale was based on a classification of occupations taken from the 1951 Canadian census and ranked on average income and schooling. These occupations are divided into seven major groups of relative prestige ranks which are not of equal interval.<sup>11</sup>

Two recent studies in Alberta made use of measures of socio-economic status. Elley, in reviewing the literature, noted that single agreement was lacking on any one scale and that many instruments are

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<sup>9</sup>Harrison G. Gough, "A Short Social Status Inventory," Journal of Educational Psychology, 40:52-56, 1949.

<sup>10</sup>August B. Hollingshead and Fredrick C. Redlich, Social Class and Mental Illness (New York: John Wiley and Sons Inc., 1958).

<sup>11</sup>Bernard R. Blishen, "The Construction and Use of an Occupational Class Scale," Canadian Journal of Economics and Political Science, 24:521-531, November, 1958.





used. He further noted that occupation is the main factor used by researchers in determining status. In his study Elley made use of the Blishen scale along with a modified Gough Home Index scale, each receiving equal weighting.<sup>12</sup> Cropley used two of the Hollingshead scales along with the Gough Home Index to arrive at an indication of socio-economic status.<sup>13</sup>

Many studies in education have considered various aspects of measured intelligence. One study which deals with the problem of socio-economic status and intelligence tests was made by Elley.<sup>14</sup> In reviewing research on the relationship between socio-economic status and measured intelligence, Elley noted that Binet, in 1908, recognized this relationship. In recent studies by Stern in Germany, Burt in England, and Terman and Merrill, Herrick and Anastasi in the United States, Elley found that there was agreement that intelligence and socio-economic background were related.

Elley stated that there is a wide divergence of opinion on the reasons for the relationship between intelligence and socio-economic status. Terman and Burt placed emphasis on heredity as the main factor while studies by the Iowa school in the United States and Floud and Halsey in England placed emphasis on the environmental factor.

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<sup>12</sup>Warwick Bartram Elley, "A Comparative Analysis of the Socio-Economic Bias in Selected Intelligence Tests," (unpublished Doctoral dissertation, The University of Alberta, Edmonton, 1961).

<sup>13</sup>Arthur John Cropley, "Socio-Economic Status and the Development of Intelligence," (unpublished Master's thesis, The University of Alberta, Edmonton, 1963).

<sup>14</sup>Warwick Bartram Elley, op. cit.





Elley concluded that agreement on the nature--nurture question will not be settled in the near future.

A third development in the relationship of intelligence to socio-economic status was test bias. Work by Havighurst and by Eells was outlined by Elley to show evidence of how tests, particularly those with verbal items favor the middle class. It was further noted that environmental factors are more important in some tests than in others.

Three of the conclusions that Elley drew in his review are as follows:

Large differences have been observed in intelligence scores of children from different social strata.

These differences have been attributed chiefly to variation in genetic equipment, environmental stimulation, and test bias--although such factors as motivation and sophistication have been shown as important.

Verbal intelligence tests show greater differences between social class than non-verbal reasoning tests.<sup>15</sup>

#### RESEARCH STUDIES IN ECONOMIC EDUCATION

Many individuals and organizations have published material on the topic of economic education. Some of this literature presents the need for economic education in our high schools today. The purpose of other literature has been to consider the basic economic concepts required by members of our modern society. Attention has also been directed to course outlines and methods of presentation suitable for high schools today.

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<sup>15</sup>Ibid., p. 30.



Several surveys have been made to establish the levels of economic understanding of American youth. Bond refers to two of these when he points to a greater need for emphasis on economics.<sup>16</sup> In one survey conducted by the Opinion Research Corporation, the median score of the level of economic understanding of senior high school students was found to be only slightly better than one based on pure chance.<sup>17</sup> A second survey which supported this conclusion found the economic knowledge of boys slightly higher than girls, and found the economic knowledge of higher socio-economic groups above those of lower socio-economic groups.<sup>18</sup> From the results of the various surveys Bond concluded, "it appears that students are not gaining sufficient understandings from their twelve years of school."<sup>19</sup>

Economic material contained in textbooks used in social studies in the United States was investigated in a survey of economic education made by McKee and Moulton. In the textbooks examined, it was found that "the economic material contained in these social studies of the problems of democracy is distinctly inferior in character and quality to that

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<sup>16</sup>Floyd A. Bond, "Need for Economic Competence," California Journal of Secondary Education, Vol. 31 #3 (March, 1956), pp. 170-4.

<sup>17</sup>Opinion Research Corporation, "The High School Market for Economic Education," The Public Opinion Index for Industry, (June, 1951), cited by Bond, Ibid., p. 172.

<sup>18</sup>Division of Educational Reference Purdue University, "Youth's Knowledge of the U.S. Economy and Related Attitudes," Report of Poll No. 42, The Purdue Opinion Panel (August, 1955), cited by Bond, Ibid., p. 173.

<sup>19</sup>Bond, op. cit., p. 173.





found in special texts devoted exclusively to economics."<sup>20</sup> The Brookings Survey also examined the six most commonly used textbooks in courses in economics or basic business and stated that:

All these texts, like those at an earlier period in American education history are primarily concerned with teaching economic principles and laws. The discussions are cast in abstract terms; few students are able to make adequate transfer to real life situations.

All the texts contained reasonably good discussions of profit incentives, and defended the profit system; but wage incentives, including profit-sharing plans, were ignored.<sup>21</sup>

Mason, in his study of the status of economic education in the public secondary schools of Iowa, considered the areas of social studies and business education. In his conclusions, Mason stated that economics as a subject was not common and was given a minor place in courses. Mason recommended that there was a need for improved economic education and that the training programs of business teachers should be reviewed.<sup>22</sup>

Green conducted a study which compared the reactions of students, teachers, and businessmen to selected economic concepts. He found that "there was considerably more agreement than disagreement of opinions among secondary school seniors, secondary school teachers, and

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<sup>20</sup>C. W. McKee and H. G. Moulton, *A Survey of Economic Education*, (The Brookings Institute, Washington, 1951), cited by G. Derwood Baker, *The Business Educator's Responsibility for Economic Education*, Tenth Annual Delta Pi Epsilon Lecture (Cincinnati, Ohio: South-Western Publishing Company, 1951), p. 13.

<sup>21</sup>Ibid., p. 17.

<sup>22</sup>William John Mason, "Studies in Economic Education in Iowa, Part II: A Survey of the Status of Economic Education in Social Studies and Business Education in Iowa Accredited Public Schools," (unpublished Doctoral dissertation, State University of Iowa, Iowa City, 1958).



businessmen."<sup>23</sup>

Malsbury conducted a study to determine which terms expressing business and economic concepts confronted the citizen who tries to keep himself informed. He found that the typical senior high school student in the study "understood somewhat more than one-half of the business and economic terms in common usage in reporting business and economic affairs,"<sup>24</sup> Malsbury concluded that students may lack sufficient knowledge of business and economic terms for the successful operation of a democracy.

A limited number of studies investigated the problem of economic understandings of high school students in relation to other factors. Included in this group of studies are those by Clark,<sup>25</sup> Ousdigian,<sup>26</sup> and Sheldon.<sup>27</sup> Although Linn investigated similar problems at a junior

<sup>23</sup>Joseph A. Green, "A Study of Certain Economic Understandings of High School Seniors and Teachers in Selected Schools of New Jersey," The National Business Education Quarterly, 30:21-22, Fall, 1961.

<sup>24</sup>Dean R. Malsbury, "A Study of the Terms that People Need to Understand in Order to Comprehend and Interpret the Business and Economic News Available Through the News Media," Business Education Forum, 9:29,40, March, 1955.

<sup>25</sup>Marvin A. Clark, "Economic Understandings of Tenth Grade Students," (unpublished Master's thesis, University of Minnesots, Minneapolis, 1962).

<sup>26</sup>Theodore O. Ousdigian, "Economic Understandings of Ninth Grade Students" (unpublished Master's thesis, University of Minnesota, Minneapolis, 1962).

<sup>27</sup>Robert J. Sheldon, "Measurement of Business Understandings, Skills, and Abilities Possessed by High School Students in the San Francisco Bay Area" (unpublished Master's thesis, San Francisco State College, San Francisco, 1959).





college level, part of his study and findings related to the problem of economic understandings in secondary schools.<sup>28</sup>

The research conducted by Clark was designed to determine whether grade ten students who had taken the general business course had better understandings of economic principles than those students who had not taken the course. Five levels of ability were determined by scores on a mental ability test and four categories of socio-economic status were established based on the parental occupations of the subjects. The Standard Achievement Test of Economic Understanding for Secondary Schools was administered and the scores of students of the same socio-economic background and general ability were compared.<sup>29</sup>

In a study similar to the one by Clark, Ousdigian measured economic understandings of grade nine students. The purpose of this study was to measure the understandings before and after a general business course and compare the scores of these students with students of the same general ability groupings and socio-economic levels who had not taken the course. Students were divided into four ability groups according to scores on a mental ability test. Classification of students into four levels of socio-economic backgrounds was based on parental occupations. To determine the economic understanding of

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<sup>28</sup>John Howard Linn, "An Analysis of the Teaching of Certain Economic Topics in the California Public Junior Colleges," (unpublished Doctoral dissertation, University of Southern California, Los Angeles, 1958).

<sup>29</sup>Clark, loc. cit.



the students, the Standard Achievement Test of Economic Understanding for secondary schools was used.<sup>30</sup>

The purpose of the study carried out by Sheldon was to measure the extent to which high school students possessed selected business understandings, skills, and abilities, and to evaluate the effectiveness of a general business course. It is to be noted that this study covered a broad range of material which included economic understandings. Students in all four years of high school were included in the population. Measurement was based on a test constructed by the investigator, and ability ratings of the students were made by a teacher of each class to which the test was administered. Comparison of scores for boys and girls, for different ability groups, for different grade levels, and for those with and without the course, were made.<sup>31</sup>

The study by Linn deals with teaching economics at the junior college level, and only minor parts refer to the problem of economic understandings at the senior high school level. The main problem was to compare the extent to which certain economic topics were taught in selected beginning economics classes and beginning business classes. The differences in mean scores of students grouped according to age, sex, father's occupation, standings in college, and background of economic study in high school and in college were analyzed. The measurement instrument used was a test constructed by the researcher

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<sup>30</sup>Ousdigian, loc. cit.

<sup>31</sup>Sheldon, loc. cit.





based on topics declared indispensable by the Council for the Advancement of Secondary Education.<sup>32</sup>

In the measurement of understanding of a particular subject, a prime consideration would appear to be the mental ability factor. In the studies by Clark, Ousdigian, and Sheldon, ability was found to have an effect on the measurement of economic understandings.

Clark found that top ability groups in business courses scored significantly higher than top ability groups without these courses. This was not true of the lower levels of ability.<sup>33</sup> Ousdigian found significant difference in scores from different ability groups, the higher groups scored better than the lower groups. In his conclusion, Ousdigian stated, "that while gain scores did not show it, results of the post test reveal that the general ability of a student does have an effect upon his capacity to learn economic concepts."<sup>34</sup>

In the study by Sheldon, placement of students in levels of ability to accomplish high school work was based on teacher evaluations, and no measurement of intelligence was undertaken. Three results are of importance. First, that scores found on the business test supported the teachers' evaluations of students' ability. Second, that teachers rated students in business courses substantially lower in ability than students in non-business courses. Third, that the above average ability students with the business course did significantly

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<sup>32</sup>Linn, loc. cit.

<sup>33</sup>Clark, op. cit., p. 57.

<sup>34</sup>Ousdigian, op. cit., p. 62.



better than the above average ability students without the course. No difference was found for the average and below average ability classifications of business and non-business students.<sup>35</sup>

Linn and Sheldon made particular reference to the factor of sex differences in the measurement of economic understandings. Linn in his study at junior college level stated, "sex is a decisive factor."<sup>36</sup> The scores of male students were significantly higher than those of female students.<sup>37</sup> Sheldon reported that boys scored higher than girls in selected business understandings, skills, and abilities. He concluded that as the students with the general business course included more girls than the non-business group, the differences would have been greater if numbers of male and female students had been equal.<sup>38</sup>

The effect of socio-economic background on economic understandings leads to such basic questions as the effectiveness of economic education in the school, and the influence of home environment on the formation of economic concepts. The few research studies that are available do not yield findings which are in agreement on the effect of socio-economic background.

Linn, in analyzing the data of his study, found that the group classed as high according to father's occupation scored significantly

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<sup>35</sup>Sheldon, op. cit., p. 62.

<sup>36</sup>Linn, op. cit., p. 161.

<sup>37</sup>Ibid., p. 149.

<sup>38</sup>Sheldon, op. cit., p. 74.





better than the group classed as low according to the father's occupation.<sup>39</sup>

In the research done by Clark, no significant difference was found among mean scores of all parental occupation groups. He concluded that the occupation of the parents does not affect the measured economic understandings.<sup>40</sup>

Ousdigian stated that the parental occupation does not affect a student's economic understandings. As the students with a basic business course scored higher, Ousdigian concluded that "students learn basic concepts inside a junior high school rather than in everyday experience outside the classroom."<sup>41</sup>

The effect of chronological age on students' economic understanding was reported in two studies. Sheldon measured students' understandings in all four high school grades and his findings indicate that students in the upper grades had higher scores.<sup>42</sup> In the study made by Linn at the junior college level where ages could vary more than in a specific year at high school, significant differences in the scores made by age levels were found to exist. Older students scored higher.<sup>43</sup> These findings again present the question of what effect experience and

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<sup>39</sup>Linn, op. cit., p. 158.

<sup>40</sup>Clark, op. cit., p. 52.

<sup>41</sup>Ousdigian, op. cit., p. 62.

<sup>42</sup>Sheldon, op. cit., p. 72.

<sup>43</sup>Linn, op. cit., p. 149.



environment outside of the school have on formation of economic concepts.

A major concern of the research studies reviewed has been the effect of certain courses on economic understandings. No conclusive patterns emerged from the findings of these studies as various courses at various grade levels were considered. Lack of consistency of findings might be accounted for because of differences in courses, methodology, and the measurement devices.

Linn found a significant difference between the mean scores of students with and without high school economics courses. Those without economics courses had higher scores than those with courses.<sup>44</sup> Linn stated, "the course or units in economics taken in high school by the students were ineffective as far as the test was concerned."<sup>45</sup> He recommended that the high school program in economics should be studied carefully and that the training program of business teachers be reviewed.<sup>46</sup>

In comparing the scores of students with and without a general business course, Sheldon found no significant difference.<sup>47</sup> In his conclusions, Sheldon states that the difference between these two groups would have been greater if the groups had contained the same

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<sup>44</sup>Ibid., p. 159.

<sup>45</sup>Ibid., p. 160.

<sup>46</sup>Ibid., p. 162.

<sup>47</sup>Sheldon, op. cit., p. 63.





number of boys and girls and if the group had been of equal ability.<sup>48</sup>

Clark found a significant difference between the economic test scores of students with a business course and the scores of students without a business course, the two groups being of homogeneous ability levels. In testing further hypotheses, a significant difference in scores of those with and without the course was found in the top three ability groups, while no significant difference was found in the lowest two ability groups.<sup>49</sup> Clark concluded that the higher ability groups gain from a course and that these students do learn in the classroom rather than from experience outside.<sup>50</sup>

In rejecting the hypothesis that there is no difference between the mean scores of the total basic business group and the non-basic business group on the post test, the two groups being homogeneous on general ability levels, Ousdigian states, "there is a significant increase in knowledge of certain basic concepts by students who had taken ninth grade basic business."<sup>51</sup> Ousdigian concluded that, "it can be assumed that those students learn basic concepts inside of junior high school rather than in everyday experience outside the classroom."<sup>52</sup>

Conclusions resulting from a review of the studies related to

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<sup>48</sup>Ibid., p. 74.

<sup>49</sup>Clark, op. cit., p. 53.

<sup>50</sup>Ibid., p. 57.

<sup>51</sup>Ousdigian, op. cit., p. 60.

<sup>52</sup>Ibid., p. 62.



economic understandings are as follows:

1. Limited economic concepts are found in social studies courses or textbooks.
2. Economic understandings of students are related to intelligence.
3. Economic understandings of high school students appear inadequate as compared to the concepts recommended for a citizen in modern society.
4. Male students appear to have better understanding of economic concepts than do female students.
5. The effect of socio-economic background on economic understandings of students is not clearly established.
6. The chronological age may have an effect on the economic understandings of students, but at one grade level little difference in age is found.
7. The effectiveness of courses in economics and general business in developing economic understandings is not firmly established.





## CHAPTER III

### SOURCES OF DATA AND PROCEDURE

This chapter describes the population of this study, the classification of socio-economic status and mental ability, the instrument used to measure economic understanding, the administrative procedure, and the method of analysis.

#### THE POPULATION

The population in this study consisted of grade twelve students in attendance during May, 1964, in the public schools in the city of Regina. Of the 907 students in grade twelve, 796 completed the test.

In the Regina public school system there are seven secondary schools which offer a university entrance program and varying amounts and types of vocational subjects. Although students mainly attend the school closest to their homes, some attend other schools to take advantage of vocational courses offered. One of the schools, in the first year of operation, had no grade twelve students in attendance.

Included in the 796 students completing the test were twenty-seven students whose scores were discarded because their records did not contain mental ability scores or because their parental socio-economic status could not be determined. Of the 769 students included in the study, forty-six were registered in a course in economics. These forty-six students were considered in the testing of the fifth hypothesis. The 723 students, 416 males and 307 females, without the economics course were considered in testing the first four hypotheses.



The forty-six students in the economics course were enrolled in a business education program. Their grade ten to twelve programs included the subjects of typewriting, shorthand, office practice, business machines, commercial law, and accounting. The two instructors in the economics course were in the business education department of their school, and both had university degrees which included classes in economics.

While some students spend more time in technical or business subjects than others, all students included in this study were enrolled in grade twelve social studies which is a compulsory course in the Province of Saskatchewan.

#### MEASUREMENT AND CLASSIFICATION OF SOCIO-ECONOMIC STATUS

Agreement appears to be lacking on what constitutes the most acceptable measure of socio-economic status. Many instruments and combinations of instruments have been used by investigators.

Hollingshead made use of the following three indicators in his measurement of socio-economic status:

1. The residential address of a household
2. The occupational position of its head
3. The years of school its head has completed

In determining the status of an individual, Hollingshead used a separate scale for each of the indicators which he weighted and combined.<sup>1</sup>

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<sup>1</sup>August B. Hollingshead and Fredrick C. Redlich, Social Class and Mental Illness: A Community Study (New York: John Wiley and Sons Inc., 1958).





It was also noted in the work by Hollingshead that the combination of the two scales of parental occupation and education provided a correlation of .906 with judgement scores of socio-economic levels.<sup>2</sup>

In the present study, socio-economic status was found in a similar way with the scale of residential address being deleted as the differences in residential areas of the city of Regina were not clearly distinguishable. The parental occupational level of individual students was determined by means of a scale developed by Edwards and modified by Hollingshead. The scale includes the following seven points:

1. Executives and proprietors of large concerns, and major professionals
2. Managers and proprietors of medium-sized businesses and lesser professionals
3. Administrative personnel of large concerns, owners of small independent businesses, and semi-professionals
4. Owners of little businesses, clerical and sales workers, and technicians
5. Skilled workers
6. Semiskilled workers
7. Unskilled workers.<sup>3</sup>

The educational level of the parental head of the family was determined by means of a scale set out by Hollingshead. The scale includes the following seven points:

1. Graduate professional training
2. Standard college or university graduate
3. Partial college training
4. High school graduate
5. Partial high school

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<sup>2</sup>Ibid., p. 393.

<sup>3</sup>Ibid., p. 390.



6. Junior high school
7. Less than seven years of school.<sup>4</sup>

Students provided the data for the classification of socio-economic status by describing their parents' occupation and by checking the highest level of their parents' educational achievement. The form used in the study appears in Appendix A.

Information from the questionnaire regarding occupations was verified in two ways. Cumulative school records for each student were compared for agreement with the parental occupation listed by students. Second, a sample of students' stated parental occupations were compared with listed occupations in the city directory. To verify parental educational achievement over 10 per cent of the population was checked by the researcher to establish that the parental educational achievement stated by the students was correct.

The final socio-economic status score was obtained by weighting and combining these scales. The rank of an individual on the parental occupational scale was multiplied by nine and the rank of the individual on the parental educational scale was multiplied by five. A range of scores from 14 to 98 resulted from this procedure.

For the purpose of testing the second and fourth hypotheses, socio-economic scores were divided into three categories--high, average, and low. The group classed as high which had scores below 49 included only those parental heads who had at least a grade twelve education and who were in the top three classifications on the occupational scale.

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<sup>4</sup>Ibid., p. 391.





The low group, those with a score greater than 74, included no parental heads who had a grade twelve education or better and no parental head holding an occupational position above the skilled worker level. Of the 723 students considered in testing the second and fourth hypotheses, 21.7 per cent were classed as high, 51.2 per cent as average, and 27.1 per cent as the low socio-economic level. For the purpose of testing the fifth hypothesis, scores of socio-economic status were not divided into categories.

#### MEASURES AND CLASSIFICATION OF MENTAL ABILITY

In the school offices, cumulative record files containing scores on mental ability tests are maintained for all students. Of the 769 students included in this study, 536 had completed a Dominion Intermediate Form A test, and 233 had completed the Otis Gamma Form Em test. Forty-five student files contained scores for both of the above tests.

For the purpose of equating the scores on the Otis Gamma test to scores on the Dominion Intermediate test, a regression equation was developed. Using the procedure outlined by Ferguson, the regression equation,  $Y' = .9649X + 5.72$ , was calculated from the scores of the forty-five students who had completed both tests.<sup>5</sup> The regression equation, correlation coefficient, means, and standard deviations appear in Table I.

For purposes of testing the third and fourth hypotheses, mental

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<sup>5</sup>George A. Ferguson, Statistical Analysis in Psychology and Education (Toronto: McGraw-Hill Book Company, Inc., 1959), pp. 99-102.



TABLE I  
MEANS, STANDARD DEVIATIONS, CORRELATION COEFFICIENT, AND  
THE REGRESSION EQUATION FOR FORTY-FIVE STUDENTS  
WITH SCORES ON TWO INTELLIGENCE TESTS

Number of Students	Intelligence Test	Mean	Standard Deviation
45 (X)	Otis Gamma	115.67	10.87
45 (Y)	Dominion Intermediate	117.33	13.04

Correlation Coefficient:  $r = +.804$

Regression Equation:  $Y' = .9649X + 5.72$





ability scores were divided into three categories--high, average, and low. The students in the high category had an intelligence quotient of 120 or higher. The students in the average category had an intelligence quotient of 103 to 119 inclusive. The students in the low category had an intelligence quotient of 102 or less. Of the 723 students considered in the testing of these hypotheses, 24.9 per cent were classed as high, 49.8 per cent as average, and 25.3 per cent as low. For purposes of testing the fifth hypothesis, intelligence test scores and transformed scores were used directly and were not divided into categories.

#### MEASUREMENT OF ECONOMIC UNDERSTANDING

The Standard Achievement Test in Economic Understandings for Secondary Schools has been used by other investigators to measure students' basic economic concepts. This test was not used because the Joint Council on Economic Education suggested that a more recent test was available. This Test of Economic Understanding, developed by a commission, had been used to examine economic understandings of high school seniors and norms had been established and the validity of it had been verified. This letter from the Joint Council on Economic Education appears as Appendix B.

Since the Test of Economic Understanding was primarily designed for use in the United States, some of the items were not applicable for use in Canada. These items were revised and submitted to an economist for approval. The revised form of the Test of Economic Understanding appears in Appendix C.



The manual for the test, as used in the United States for high school seniors with a course in economics, indicated that a mean of 29.46 and a standard deviation of 7.81 was attained. The time allotted for the completion of the test consisting of fifty multiple choice items was one hour.

#### ADMINISTRATION OF ECONOMIC UNDERSTANDING TEST

The Test of Economic Understanding was administered to the grade twelve students of the Regina public school system during the last week of May, 1964. This was the latest possible time available prior to students being dismissed for final examinations.

All teachers supervising the administration of the test were given instructions by the researcher and were provided with a copy of the Directions to the Examiner. Directions to the Examiner appears as Appendix D. The answer form provided students appears in Appendix A.

To provide an indication of reliability, the same test was readministered a week later to a group of forty-four students who were enrolled in the economics course. The correlation coefficient for the two sets of scores was found to be  $+0.71$  which was significant at the 5 and 1 per cent levels on the Table of Critical Values of the Correlation Coefficient.<sup>6</sup>

#### METHOD OF ANALYSIS

A three-way analysis of variance was used to test the first four

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<sup>6</sup>Ferguson, op. cit., p. 315.





hypotheses where the procedure for a two by three by three design outlined by Winer was followed.<sup>7</sup> Student scores on the Test of Economic Understanding were grouped first by sex, then by the three levels of socio-economic status, and finally by the three categories of intelligence. The level of significance proposed for the F test in the analysis of the first four null hypotheses was .05.

Since unequal cell frequencies were obtained in the analysis of variance, the computations were made using the unweighted-means method described by Winer.<sup>8</sup> This method is suggested as suitable by Johnson and Jackson,<sup>9</sup> and was used for a similar situation by Snedecor.<sup>10</sup>

For the purpose of testing the fifth hypothesis, the economic test scores of the forty-six economic students were compared with scores of forty-six randomly selected non-economic students. The same number of male and female students as found in the economic group were selected from the 723 non-economic students by use of a table of random numbers.<sup>11</sup> The potential sources of bias resulting from the variables

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<sup>7</sup>B. J. Winer, Statistical Principles in Experimental Design (New York: McGraw-Hill Book Co. Inc., 1962), pp. 248-252.

<sup>8</sup>Ibid., pp. 241-243.

<sup>9</sup>Palmer O. Johnson and Robert W. B. Jackson, Modern Statistical Methods: Descriptive and Inductive (Chicago: Rand McNally and Company, 1959).

<sup>10</sup>George W. Snedecor, Statistical Methods (fourth edition; Ames, Iowa: The Iowa State College Press, 1946).

<sup>11</sup>James E. Wert, Charles O. Neidt and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research (New York: Appleton-Century-Crofts, Inc., 1954), pp. 109-110.



of socio-economic status and intelligence were controlled statistically by the analysis of covariance method.

Identification numbers, economic test scores, mental ability scores, and socio-economic ratings for the forty-six economic and the forty-six non-economic students were entered on punch cards which were processed at the computing center of the University of Alberta. A program on the Analysis of Covariance by Hurst and modified at the University of Alberta was followed.<sup>12</sup> This program adjusted the scores on economic understandings on the basis of the variables of intelligence and socio-economic status as described by Winer.<sup>13</sup> The significance of the difference between the adjusted means on the economic scores was calculated and tested using the F test at the 5 per cent level.

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<sup>12</sup>Rex L. Hurst, Analysis of Covariance Program (Logan: Utah State University, Computer Center, 1963).

<sup>13</sup>Winer, op. cit., Chap. 11.





## CHAPTER IV

### ANALYSIS OF DATA AND FINDINGS

This chapter will present the findings, statistical analysis, and interpretations of the results. In the first section of this chapter the four hypotheses relating to the scores of the 723 students without the economic course will be considered. In the second section of this chapter the fifth hypothesis which compares the scores of students with an economic course and the scores of those without the course will be considered. In the last section of this chapter the results in terms of the stated hypotheses will be reviewed. Conclusions drawn and implications derived from the findings will be presented in the following chapter.

#### ANALYSIS AND FINDINGS RELATED TO THE FIRST FOUR HYPOTHESES

The first three hypotheses, as set out in null form in Chapter I, serve to test the significance of any differences in measured economic understandings of male and female students, the significance of any differences in measured economic understandings of students of three levels of socio-economic status, and the significance of any differences in measured economic understandings of students of three categories of intelligence. The fourth hypothesis tests for interaction of the factors of sex, socio-economic status, and intelligence on the measured economic understandings of students.

The scores of the 723 students on the Test of Economic



Understanding were analyzed by the analysis of variance method outlined by Winer.<sup>1</sup> The three factors considered were sex, socio-economic status, and intelligence. The two categories of sex included 416 males and 307 females. The three levels of socio-economic status included 150 students classed as high, 370 as average, and 196 as low. The method of determining the socio-economic level is set out in the preceding chapter. The three categories of intelligence included 180 students classed as high, 360 as average, and 183 as low.

The analysis of variance was a two by three by three design with eighteen cells of unequal numbers. The analysis of variance using the unweighted means method, described by Winer, was used.<sup>2</sup> The means, the sum of the squares, and the variances for each cell are found in Table II. The summary of the analysis of variance including the mean squares, the degrees of freedom, the sum of the squares, the F ratios, and the critical values at the .05 level are found in Table III.

The observed F ratios for sex and socio-economic status are both larger than the critical values at the .05 and .01 levels of significance. It must, however, be further noted that the F ratio of the interaction between these two factors is also above the critical value at the .05 level. This interaction, therefore, may tend to mask the effect that each of the two factors has on the scores. A further investigation was carried out using the suggestion of Winer that the simple main

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<sup>1</sup>B. J. Winer, Statistical Principles in Experimental Design (New York: McGraw-Hill Book Co. Inc., 1962).

<sup>2</sup>Ibid.





TABLE II

DATA FOR A THREE-WAY CLASSIFICATION OF ANALYSIS OF VARIANCE  
OF SCORES OF THE 723 NON-ECONOMIC STUDENTS

Intelligence level	High			Average			Low		
	high	average	low	high	average	low	high	average	low
Male	n	37	58	16	39	99	51	9	63
	$\sum X$	1097	1636	417	1058	2449	1159	214	1291
	$\bar{X}$	29.648	28.207	26.062	27.128	24.734	22.725	23.777	20.492
	$\sum X^2$	33025	47586	11413	29874	63403	27391	5224	27723
	SS	500.43	1439.52	544.94	1172.36	2821.17	1052.16	135.56	1267.75
	$s^2$	13.90	25.25	36.33	30.85	28.79	21.04	16.95	20.45
Female	n	30	28	11	35	86	50	7	36
	$\sum X$	784	752	272	781	1906	1079	159	658
	$\bar{X}$	26.133	26.857	24.727	22.414	22.162	21.580	22.714	18.277
	$\sum X^2$	21186	20750	7112	17933	43898	24177	3701	12464
	SS	697.48	553.43	386.18	505.54	1655.72	892.18	89.43	437.22
	$s^2$	24.05	20.49	38.62	14.87	19.48	18.21	14.90	12.49
									6.55



TABLE III

SUMMARY OF THE ANALYSIS OF VARIANCE WITH F RATIOS AND CRITICAL  
VALUES OF SCORES OF THE 723 NON-ECONOMIC STUDENTS

Source of Variation	Sum of Squares	df	Mean Squares	F	Critical Value .05
A (sex)	344.951	1	344.951	16.392 **	3.85
B (socio-economic)	590.381	2	295.191	14.027 **	3.01
C (intelligence)	2721.182	2	1360.591	64.655 **	3.01
AB	163.552	2	81.776	3.886 *	3.01
AC	110.268	2	55.134	2.620	3.01
BC	172.356	4	43.089	2.048	2.38
ABC	80.470	4	20.117	.956	2.38
within	14836.120	705	21.044		

\*\* Significant at the .05 and .01 levels

\* Significant at the .05 level





effects be considered in this situation.<sup>3</sup>

Using the computational procedure for a three-way analysis of variance with unequal cells, the sum of the squares and the mean squares for these simple main effects were calculated. The summary of this data, the F ratio for each of these simple main effects, and the critical values are found in Table IV.

In considering the factor of sex difference on economic understanding test scores, it was observed in the testing of the simple main effects, Table IV, that the difference was significant at the .05 and .01 levels for high and average socio-economic levels of students, with the scores of male students higher than those of female students. No significant difference was observed between the two sexes where they were from the low level of socio-economic background. Scores for students in the high and average ability levels were significantly different for the two sexes at the .05 and .01 level with the scores of male students higher than those of female students. Scores for the low ability groups were not significantly different for the two sexes. In comparing the means of the cells, Table II, page 42, it is noted that in all cases except where students were low both in ability and socio-economic status, scores of male students were higher than those of female students. The mean score of all the male students was also higher than the mean score of all the female students as is indicated in Table V.

In testing the simple main effects, Table IV, socio-economic

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<sup>3</sup>Ibid., p. 208.



TABLE IV

SUMMARY OF ANALYSIS OF VARIANCE: THE SIMPLE MAIN EFFECTS  
WITH F RATIOS AND CRITICAL VALUES OF THE SCORES  
OF THE 723 NON-ECONOMIC STUDENTS

Variation	Sum of Squares	df	Mean Squares	F	Critical Value .05
A for $b_1$	355.573	1	355.573	16.896 **	3.85
A for $b_2$	151.967	1	151.967	7.221 **	3.85
A for $b_3$	.991	1	.991	.477	3.85
A for $c_1$	154.966	1	154.966	7.363 **	3.85
A for $c_2$	293.582	1	293.582	13.950 **	3.85
A for $c_3$	6.700	1	6.700	.318	3.85
B for $a_1$	671.213	2	335.607	18.322 **	3.01
B for $a_2$	82.720	2	41.360	1.138	3.01
B for $c_1$	176.226	2	88.113	4.188 *	3.01
B for $c_2$	159.562	2	79.781	3.791 *	3.01
B for $c_3$	426.900	2	213.450	10.143 **	3.01
within	14836.120	705	21.044		

\*\* Significant at the .05 and .01 levels

\* Significant at the .05 level

A -- Sex

B -- Socio-economic level

C -- Intelligence level





TABLE V

MEAN SCORES OF THE 723 NON-ECONOMIC STUDENTS  
GROUPED ACCORDING TO SEX, SOCIO-ECONOMIC  
BACKGROUND, AND INTELLIGENCE

Factor	Group	Number	Mean Score
Sex	Male	416	24.404
	Female	307	22.450
Socio- Economic Status	High	157	26.070
	Average	370	23.492
	Low	196	21.730
Intelligence	High	180	27.544
	Average	360	23.422
	Low	183	19.967
Total		723	23.574



background was found to yield a significant difference in economic understanding scores of male students at the .05 and .01 levels, with scores of students decreasing from high to low socio-economic groups, but there was no significant difference in scores of female students. Significant differences at the .05 level were found for the factor of socio-economic background for all levels of ability, with scores of students decreasing from high to low socio-economic groups, but only the low ability level yielded a significant difference at the .05 and .01 levels. In comparing the cell means of the scores on the economic understanding test, Table II, page 42, it was observed that they decrease as they move from high to average to low socio-economic level with two exceptions, one between high and average ability female students, and one between average and low ability female students. The mean scores of all the students in the high, average, and low socio-economic categories decrease in order as is indicated in Table V, page 46.

The significant F ratio for intelligence, as in the Summary of the Analysis of Variance, Table III, page 43, together with the fact that no interaction involving this factor was significant, clearly indicates that intelligence has a positive effect on the scores of the Test of Economic Understanding. This would support the rejection of the hypothesis that no significant difference exists between scores for students with high, average, or low intelligence.

A further investigation was carried out to determine if the gaps between the mean scores of the three ability groups were significant.





Means were calculated for the 723 students when divided only by ability. The 180 students classed as high ability had a mean score of 27.544, the 360 students classed as average ability had a mean score of 23.442, and the 183 students classed as low ability had a mean score of 19.967. The differences in mean scores between high and average ability, between average and low ability, and between high and low ability were found to be significant as the gap between the means required for significance calculated by the Tukey procedure was 2.578.<sup>4</sup> Means of the three ability groups and the gaps are set out in Table VI.

#### ANALYSIS AND FINDINGS RELATED TO THE FIFTH HYPOTHESIS

The main concern of this hypothesis is to investigate the effect of a course in economics on students' scores on the Test of Economic Understanding. Included in the total population of 769 completing the test, were forty-six students enrolled in a grade twelve economics course. In order to make a comparison, forty-six non-economic students were randomly selected from the 723 non-economic students to include the same numbers of male and female students as existed in the economic group.

Analysis of covariance was used to investigate the effect of an economics course on students' scores on the Test of Economic Understanding.<sup>5</sup> In this procedure an indirect or statistical control is used to

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<sup>4</sup>Ibid., p. 87.

<sup>5</sup>Ibid., Chap. 11.



TABLE VI

MEAN SCORES AND GAPS BETWEEN THE MEAN SCORES OF THE  
HIGH, AVERAGE, AND LOW ABILITY GROUPINGS  
OF THE 723 NON-ECONOMIC STUDENTS

Ability Group	Number	Mean	Gap
High	180	27.544	$\begin{array}{l} \searrow 4.122 * \\ \searrow 3.455 * \end{array} \begin{array}{l} \nearrow \\ \nearrow \end{array} 7.577 *$
Average	360	23.422	
Low	183	19.967	
Total	723	23.574	

\* Significant

Significant Gap --  $2.578 < .05$





remove potential sources of bias resulting from the concomitant variates. The criterion or variate of primary interest in this analysis was the score on the test, with two treatment groups, economic students and non-economic students. The concomitant variates or covariates were the intelligence levels and socio-economic background levels. The measurements of the covariates were used to adjust the measurements on the variate.

It was observed from the data collected that economic students had a mean ability score of 105.826 which was lower than the non-economic students' mean ability scores of 110.500. Similarly it was observed that economic students had a mean socio-economic score of 75.630 which was lower than the sample of non-economic students whose mean socio-economic score was 64.348. The means of the variate before adjusting for the covariates showed that the economic students had a mean score of 24.522, higher than the mean score of 22.000, for the non-economic students. These figures appear in Table VII.

The adjusted analysis of variance was carried out using the computer program of the University of Alberta. The summary of this program is set out in Table VIII. The adjusted mean scores of the variate, that is the adjusted mean scores on the Test of Economic Understanding, were 25.112 for the economic group and 21.410 for the non-economic group. Table VIII shows that the calculated F ratio for these adjusted means was clearly above the critical value at the .05 and .01 levels, indicating a significant difference in the mean scores of the economic and non-economic groups.



TABLE VII

COMPARISON OF MEANS OF SCORES OF ABILITY, SOCIO-ECONOMIC  
STATUS, AND THE TEST OF ECONOMIC UNDERSTANDING  
OF ECONOMIC AND NON-ECONOMIC STUDENTS

Group	n	Mean Ability Score	Mean Socio- Economic Score	Test Mean	Adjusted Test Mean
Economic	46	105.826	75.630	24.522	25.112
Non-Economic	46	110.500	64.348	22.000	24.410





TABLE VIII

SUMMARY OF ANALYSIS OF COVARIANCE OF ADJUSTED SCORES  
OF FORTY-SIX ECONOMIC STUDENTS AND FORTY-SIX  
RANDOMLY SELECTED NON-ECONOMIC STUDENTS

Variation	Sum of Squares	df	Mean Squares	F	Critical Value .05
Between	280.284	1	280.284	15.033 **	3.95
Within	1640.760	88	18.645		
Total	1921.044	89			

\*\* Significant at the .05 and .01 levels



## RESULTS IN TERMS OF THE STATED HYPOTHESES

The hypotheses and the related findings of this study are as follows:

### Hypothesis I

There is no significant difference in measured economic understanding of male and female students.

The hypothesis was rejected as the F ratio of the factor of sex in the analysis of variance was found to be significant at the .05 level. The F ratio found for the simple main effects indicated that the factor of sex was significant for the high and average ability groups and for the high and average categories of socio-economic status. The factor of sex was not significant for low ability groups or for the low socio-economic status levels.

### Hypothesis II

There is no significant difference in measured economic understanding of students of high, average, or low socio-economic levels.

This hypothesis was rejected as the F ratio of the factor of socio-economic status in the analysis of variance was found to be significant at the .05 level. The F ratio found for the simple main effects indicated that the factor of socio-economic status was significant for male students and for ability groups. The factor of socio-economic status was not significant for female students.

### Hypothesis III

There is no significant difference in measured economic understanding of students with high, average, or low intelligence.





This hypothesis was rejected. Significant difference at the .05 level was found and there were no significant interaction effects.

#### Hypothesis IV

There is no interaction on the student scores of measured economic understanding (1) between sexes and socio-economic levels; (2) between sexes and ability groups; (3) between socio-economic levels and ability groups; (4) among sexes, socio-economic levels, and ability groups.

The first part of this hypothesis was rejected as the F ratio for the interaction between sexes and socio-economic level was significant at the .05 level. The second, third, and fourth parts of this hypothesis were accepted as no significant difference for these interactions was found.

#### Hypothesis V

There is no significant difference between the measured economic understanding of students with a course in economics and those without the course, when adjustment is made for ability and socio-economic background.

This hypothesis must be rejected. Significant difference existed between the adjusted mean scores of the two groups at the .05 level.



## CHAPTER V

### SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

While many factors may affect the economic understanding of high school students, this study investigated only the effects of sex, socio-economic background, intelligence, and a course in economics.

Three-way analysis of variance was used to test the effect of the factors of sex, socio-economic background, and intelligence on the Test of Economic Understanding scores of students without an economics course. Analysis of covariance was used to test the effect of an economics course on the Test of Economic Understanding scores of students.

### CONCLUSIONS

The conclusions which apply to the population of grade twelve students enrolled in the Regina public school system in the spring of 1964 are as follows:

1. Except for those of both low ability and low socio-economic backgrounds, male students have a better understanding of economic concepts than do female students.
2. Students' understanding of economic concepts relates to their socio-economic background. Male students of higher socio-economic status have a better understanding than do those of lower status, but no difference was found for the female students of different socio-economic levels.
3. Students' understanding of economic concepts relates positively





to their levels of intelligence as measured by mental ability tests.

4. Grade twelve economic students have a better understanding of economic concepts than do grade twelve non-economic students.
5. Since student scores are related to socio-economic background for all levels of ability, it would appear that experience outside the classroom has an effect on students' economic understanding.
6. The course of economics does positively affect students' understanding of economic concepts and therefore indicates the course is of value in terms of the course objectives.

### IMPLICATIONS AND RECOMMENDATIONS

In this study some of the factors which may affect economic understandings of grade twelve students were investigated and the conclusions were based on the findings. This study was intended to provide data for further investigation of the main problem presented--should economics be taught in high schools?

Implications and recommendations which arise from the findings depend on assumptions and value judgements concerning economic education. One assumption is that economic education in high schools is necessary to prepare students for adult life. Another assumption is that economics as a high school subject is as valuable as other elective courses presently offered in high schools.

The implications and recommendations are as follows:

1. If the test used in this study is accepted as an adequate



measurement device and the assumptions on economic education are accepted, there is a need for greater emphasis on economic concepts in high schools. Since the test was designed by a committee of the Joint Council on Economic Education for the senior high school level to measure basic economic understandings, a mean score of 23.574 for all students in the study on a fifty item multiple choice test appears low. Further use of this test, particularly in Canada, might provide information upon which a better judgement could be made.

2. Schools should encourage more students to select economics as an elective. A small percentage of high school students are enrolled in the economics elective and these are business education students who are of low ability and low socio-economic status. This means that few of the above-average students have the opportunity to be challenged with modern economic problems.
3. In schools where the economics elective is not offered, consideration should be given either to have all students take a general business course containing economic concepts or to place more emphasis on economics in other subjects such as social studies.
4. In order to reveal the concepts which are being successfully learned, an investigation should be made of the content of an economics course in relation to the various test items.
5. A study should be undertaken using a pretest and post test to measure the effect of an economics course.





6. Courses which include economic concepts should be taught with awareness of individual differences in both students' ability and their socio-economic background.
7. Teacher training programs for business teachers and social studies teachers should include a course in economics.
8. An investigation should be made of the effect of teaching methods and teachers' training and background on the students' scores on the Test of Economic Understanding.
9. The relationship of sex, socio-economic status, and intelligence to students scores on the individual test items on the Test of Economic Understanding should be analyzed.
10. A test should be constructed to examine students' application of concepts to local problems. The results of this test could be used to validate the Test of Economic Understanding.
11. The Test of Economic Understanding should be administered to adults so that a comparison with student understanding could be made.
12. A study of the effect of socio-economic status on students' achievement in all high school subjects might reveal whether the effect of socio-economic status on economics is significantly different from its effect on other subjects.
13. A replication of the present study should be made to support or reject the method of analysis used.
14. A study should be conducted in Canada to provide norms for the Test of Economic Understanding.



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## APPENDIX A





**SAMPLES**

	A	B	C	D
<b>S1</b>	••	•• •• •• ••	•• •• •• ••	•• •• •• ••
<b>S2</b>	••	••	•• •• •• ••	•• •• •• ••
<b>S3</b>	••	••	••	•• •• •• ••

1	A	B	C	D	11	A	B	C	D	21	A	B	C	D	31	A	B	C	D	41	A	B	C	D
2	A	B	C	D	12	A	B	C	D	22	A	B	C	D	32	A	B	C	D	42	A	B	C	D
3	A	B	C	D	13	A	B	C	D	23	A	B	C	D	33	A	B	C	D	43	A	B	C	D
4	A	B	C	D	14	A	B	C	D	24	A	B	C	D	34	A	B	C	D	44	A	B	C	D
5	A	B	C	D	15	A	B	C	D	25	A	B	C	D	35	A	B	C	D	45	A	B	C	D
6	A	B	C	D	16	A	B	C	D	26	A	B	C	D	36	A	B	C	D	46	A	B	C	D
7	A	B	C	D	17	A	B	C	D	27	A	B	C	D	37	A	B	C	D	47	A	B	C	D
8	A	B	C	D	18	A	B	C	D	28	A	B	C	D	38	A	B	C	D	48	A	B	C	D
9	A	B	C	D	19	A	B	C	D	29	A	B	C	D	39	A	B	C	D	49	A	B	C	D
10	A	B	C	D	20	A	B	C	D	30	A	B	C	D	40	A	B	C	D	50	A	B	C	D

NAME \_\_\_\_\_ DATE \_\_\_\_\_  
(print) last first

AGE \_\_\_\_\_ GRADE \_\_\_\_\_ SEX M F (circle one)

SCHOOL \_\_\_\_\_ FORM \_\_\_\_\_

Economics Business Fundamentals Business Essentials

**FATHER'S OCCUPATION:** \_\_\_\_\_  
(Describe what he does and where he works, for example, salesman for Massey-Ferguson, sales clerk at Eatons).

**MOTHER'S OCCUPATION:** \_\_\_\_\_

### CHECK THE LEVEL OF EDUCATION COMPLETED BY YOUR

Father	Mother
<input type="checkbox"/> less than grade 8	<input type="checkbox"/> less than grade 8
<input type="checkbox"/> grade 8	<input type="checkbox"/> grade 8
<input type="checkbox"/> grade 9	<input type="checkbox"/> grade 9
<input type="checkbox"/> grade 10	<input type="checkbox"/> grade 10
<input type="checkbox"/> grade 11	<input type="checkbox"/> grade 11
<input type="checkbox"/> grade 12	<input type="checkbox"/> grade 12
<input type="checkbox"/> post school training (eg. business, college, university, trade school)	<input type="checkbox"/> post school training (eg. business, college, university, nursing)
<input type="checkbox"/> university degree	<input type="checkbox"/> university degree
<input type="checkbox"/> post graduate degree	<input type="checkbox"/> post graduate degree



## APPENDIX B





## COPY OF LETTER FROM THE JOINT COUNCIL ON ECONOMIC EDUCATION

2 West 46th Street  
New York, New York  
April 10, 1964

Mr. Morris W. Campbell  
Room 452  
Education Building  
University of Alberta  
Edmonton, Alberta, Canada

Dear Sir:

It will be perfectly alright for you to use the Standard Achievement Test in Economic Understanding for secondary schools insofar as permission from the Joint Council is concerned. However, a commission was appointed in 1961 to develop a more adequate test for economic understanding. The results of this commission's work are Forms A and B of the Test for Economic Understanding now being distributed by Science Research Associates, 259 East Erie Street, Chicago 11, Illinois. A sample set of this test is available at 75¢ from Science Research Associates. I would suggest that you consider seriously using this test instead of the Standard Achievement Test because of its recency and the fact that norms have been established and validity of the test has been verified.

I am enclosing a copy of the latest revision of the Alft Standard Achievement Test, but there are no norms for this test. The cost of the test is 75¢.

Sincerely

John P. McIntyre  
Director of Curriculum



## APPENDIX C





## TEST of ECONOMIC UNDERSTANDING

### Form B — Canadian Revision

#### DIRECTIONS

This test is designed to measure your understanding of economics. Not all students will have taken a formal course in economics, but most have learned something about the subject in their regular courses, through reading, listening to the radio, or watching television. These questions will measure how well you understand the principles of economics and the way our economy operates. It is probable that you will not know the answers to some questions. However, you should answer *every* question by marking what you think is the best choice, using the information you do have in selecting your answer. Work at a comfortable speed, but do not spend too much time on any one item.

The test consists of fifty questions or incomplete statements, for each of which you are to choose the *one best answer*. Even though in some instances more than one answer may appear to be correct, your task is to choose the *best* answer. After you have read the question and chosen your answer, use your pencil to blacken the space on the answer sheet that corresponds to the answer you have chosen. Now read the sample questions below and mark your answers on the answer sheet.

#### Sample Question 1

Prices are usually lower for a product when

- A. only one company produces it.
- B. several competing companies produce it.
- C. labor unions are strong where it is produced.
- D. the federal government controls its production.

#### Sample Question 2

The federal government exercises the closest control over

- A. banking and money.
- B. high school education.
- C. food distribution.
- D. oil companies.

#### Sample Question 3

For which of the following groups is the average income *lowest*?

- A. Business executives
- B. Physicians
- C. Engineers
- D. Farmers



**TEST OF**  
**ECONOMIC UNDERSTANDING**  
**Form B – Canadian Revision**

1. When a nation's human and material resources are being fully and efficiently used, more of any one product
  - A. cannot be produced.
  - B. cannot be produced unless private enterprise rather than government does so.
  - C. can be produced only if there is less production of some other products.
  - D. can be produced only if there is a general decrease in prices.
  
2. All economic systems (capitalist, communist, feudal, or any others) face similar economic problems. Which *one* of the following questions would some but not all economies face?
  - A. What shall be produced and how?
  - B. How can markets be kept competitive?
  - C. How many resources shall be devoted to maintaining and increasing future capacity?
  - D. For whom shall the goods be produced?
  
3. In a basically private enterprise economy, which group exercises the principal influence on the choice of goods produced over a long period of time?
  - A. Consumers
  - B. The government
  - C. Big business
  - D. Labor unions
  
4. Of the following, which is *not* a function of profits in a basically private enterprise economy?
  - A. Providing an incentive for efficient production by businesses
  - B. Rewarding producers who give consumers what they demand
  - C. Inducing businessmen to assume necessary business risks
  - D. Indicating to the government where wages are too low
  
5. How does a family's saving most clearly influence capital formation?
  - A. Saving means spending less; therefore family saving hurts the seller and thus discourages capital formation.
  - B. Savings are always invested by the saver; therefore an increase in family saving increases capital formation.
  - C. A family's savings are normally channeled through financial institutions to firms that usually use the savings for capital formation.
  - D. A family's saving leads to capital formation when it is used to pay off debts.



6. In a basically private enterprise economy, the main role of businessmen is to
- A. provide good jobs for workers at reasonable wages.
  - B. secure government regulation that is favorable to business.
  - C. try to make profits.
  - D. provide highest quality products.
7. If a consumer is to exercise his freedom of choice wisely in a private enterprise economy,
- A. he should know whether a product was produced by a monopolist.
  - B. he must know where products are produced so that he may purchase those made locally if possible.
  - C. he should know what alternative goods and services are available as well as their qualities and prices.
  - D. he must have sufficient income to permit him to purchase whatever he chooses.
8. Assume that, for a commodity produced by many competitive firms, the demand increases. The resulting rise in price of the commodity will usually lead to
- A. less being produced.
  - B. more being produced.
  - C. no change in production.
  - D. elimination of inefficient businesses from the market.
9. If the supply of a commodity increases at the same time as the demand for it falls, in the absence of counteracting forces its price will
- A. rise.
  - B. fall.
  - C. stay the same.
  - D. be indeterminate.
10. In a private enterprise economy, the public interest is served even when individuals pursue their own private economic goals, because of
- A. social responsibility of private businessmen.
  - B. careful planning and coordination of economic activity.
  - C. the operation of competitive markets.
  - D. individuals who understand what is in the public interest.
11. Under a private enterprise economy the function of competition is to
- A. eliminate wasteful advertising.
  - B. eliminate interest and profits.
  - C. prevent large firms from driving small ones out of business.
  - D. force prices to the lowest level consistent with a reasonable profit.

12. Of the following factors, which one is *not* likely to increase the demand for bricks?
- A. An increase in the price of home construction
  - B. An increase in the incomes of potential home builders
  - C. A decrease in the price of mortar (i.e., a complementary commodity)
  - D. An increase in the price of lumber (i.e., a substitute for bricks)
13. Which of the following is the most basic economic objection to monopolies?
- A. Prices set by monopolies are usually too low.
  - B. Monopolies exert disproportionate political power.
  - C. When a monopoly fails, the effect upon our economy is far more serious than when a competitive enterprise fails.
  - D. Economic resources will tend to be less efficiently allocated.
14. Which one of the following is *untrue* of the economy of Canada over the past fifty years?
- A. Monopoly has increased to the point that it controls over half of our production.
  - B. The average size of firms has grown substantially.
  - C. The number of small firms and the number of large firms have both increased.
  - D. Improved transportation and communication have resulted in firms competing over larger markets.
15. When the federal government attempts to eliminate monopolies, it does so mainly in order to
- A. ensure competition.
  - B. prevent small firms from decreasing.
  - C. expand public utilities.
  - D. prevent the growth of big business.
16. In large business corporations the common stockholders generally do *not*
- A. own the business.
  - B. receive a share of the profits.
  - C. vote for the board of directors.
  - D. manage the day-to-day business.
17. The opportunity cost (or alternative cost) of a new public high school is the
- A. money cost of the new building.
  - B. other desirable economic goods that must be foregone to secure the school.
  - C. necessary increase in the annual tax rate.
  - D. cost of constructing it now as opposed to the cost of a new school at a later date.

18. Government expenditures (federal, provincial, and local combined) now represent about what portion of the gross national product?
- A. About a tenth
  - B. About a quarter
  - C. About half
  - D. About three-fourths
19. The bulk of federal government expenditure during the past few years has been for
- A. foreign aid.
  - B. the space program.
  - C. special benefits for the poor and unemployed.
  - D. national defense.
20. When levied in a basically private enterprise economy, which tax is likely to alter most the pattern of consumer choices among alternative products?
- A. A general sales tax
  - B. A personal income tax
  - C. An excise tax on particular products
  - D. A tax on business profits
21. Specialization and exchange between nations or within a nation tend to have which of the following effects?
- A. A larger total quantity of wanted goods and services can be produced.
  - B. The independence of both nations and individuals is increased.
  - C. The danger of economic instability is reduced.
  - D. All costs of production will rise, but not proportionately.
22. When a nation is running a deficit in its international balance of payments, it is always
- A. exporting more goods than it is importing.
  - B. importing more goods than it is exporting.
  - C. paying more to other nations than others are paying to it.
  - D. helping less fortunate nations to develop economically.
23. Reduced Canadian tariffs would probably
- A. lessen job opportunities in our export industries.
  - B. injure most farmers.
  - C. force some workers out of jobs in presently protected industries.
  - D. lower the average Canadian standard of living.



24. When obtained at various intervals, which one of the following four types of statistics will give the best measure of the economic growth of a nation?
- A. Balance of payments
  - B. Index of stock prices
  - C. Total employment
  - D. Real income per capita
25. Annual gross national product is a measure of
- A. the quantity of goods and services produced by private businesses.
  - B. the value of a nation's total output of goods and services.
  - C. the price level of goods and services sold.
  - D. that part of production which is used by the government.
26. The maximum gross national product a nation can produce in any one year is set by
- A. its natural resources.
  - B. families' demand for products.
  - C. the amount of money people have to spend.
  - D. its productive resources.
27. Often an economy operates at less than full employment. This is most likely to occur
- A. when total spending is inadequate.
  - B. when there is inflation.
  - C. when there is a scarcity of unskilled labor.
  - D. whenever competition is intense.
28. The total output of the economy is bought by three large groups of spenders. The groups are
- A. farmers, laborers, and housewives.
  - B. consumers, business firms, and governments.
  - C. investors, speculators, and bankers.
  - D. corporations, households, and capitalists.
29. In recessions in Canada since World War II, which of the following has declined most sharply?
- A. Family spending on consumer goods
  - B. Business firms' spending on plants, equipment, and inventories
  - C. Family spending on services
  - D. Government spending on goods and services
30. Increasing the government budgetary surplus or decreasing the deficit is particularly desirable in a period of
- A. inflation.
  - B. mass unemployment.
  - C. depression.
  - D. economic instability.

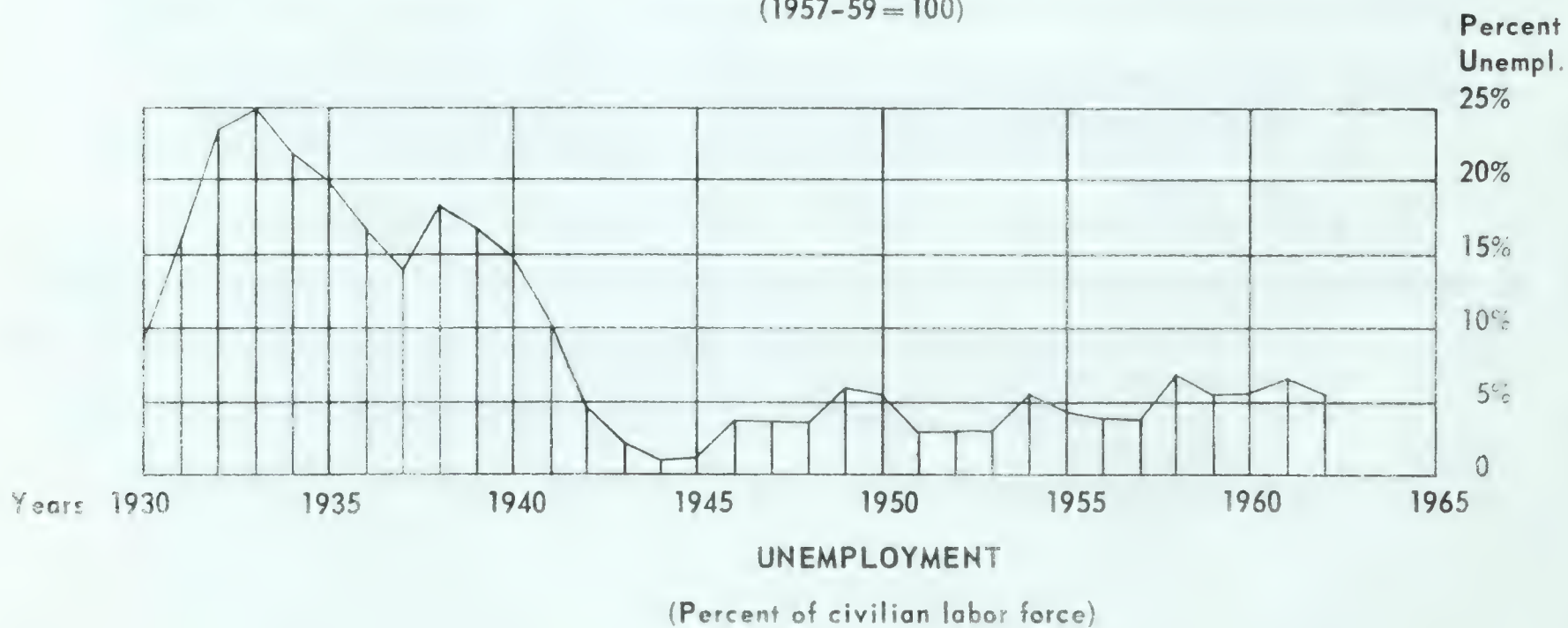
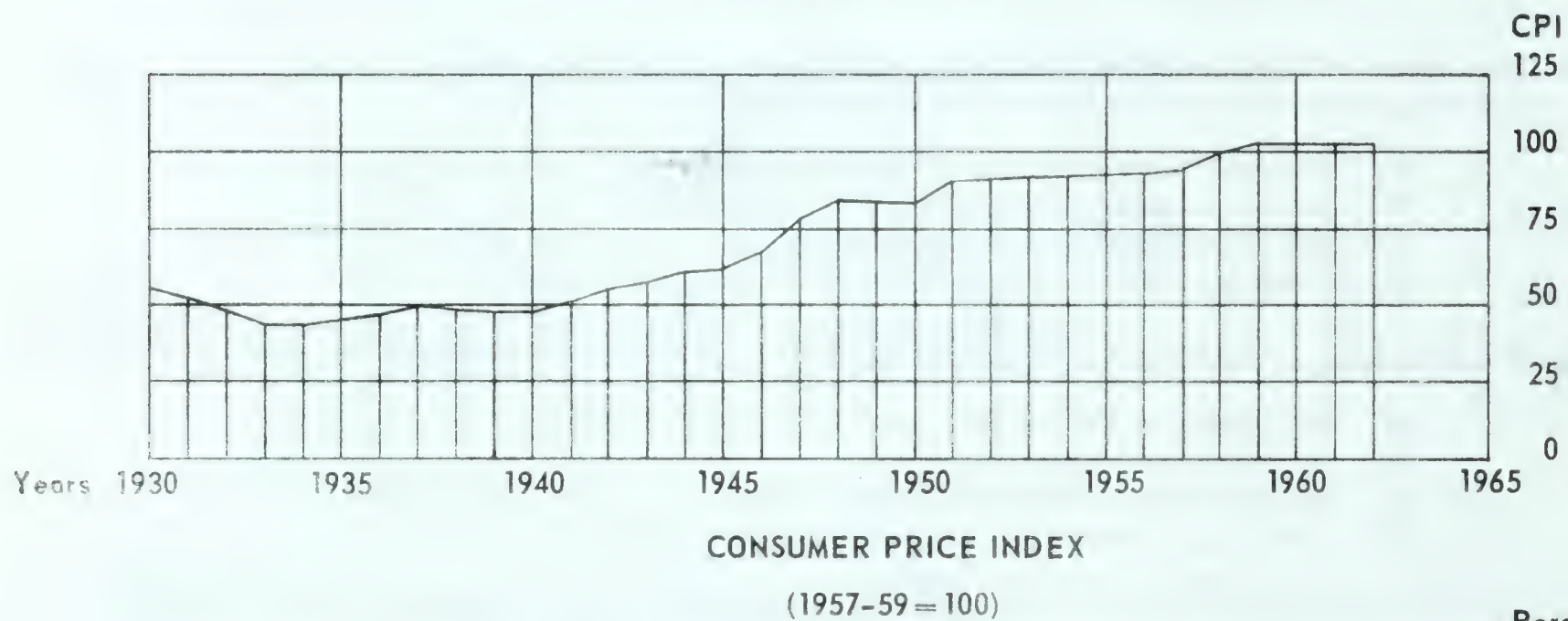
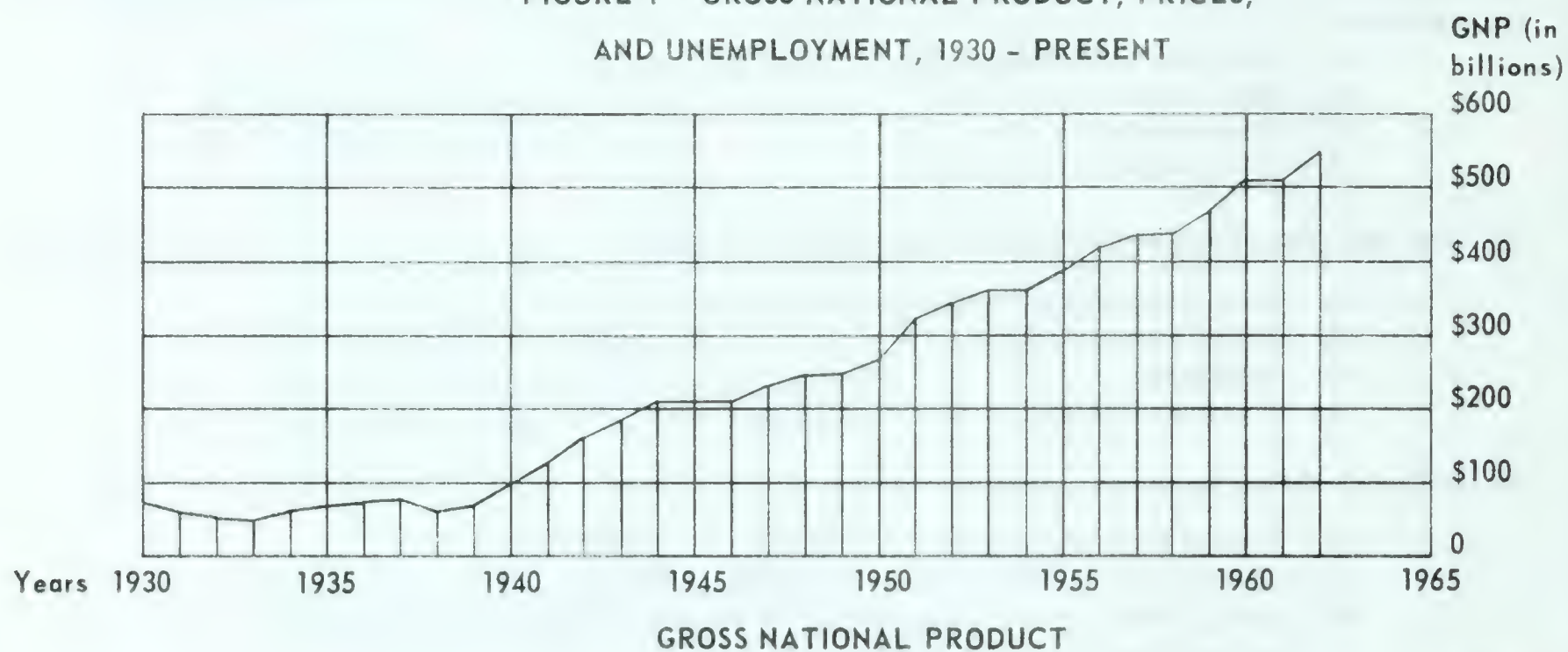


31. The primary reason for the growth in federal debt over the last century has been government deficits caused by
- A. wasteful domestic expenditures and social welfare payments.
  - B. depressions and recessions.
  - C. declining tax receipts.
  - D. wars.
32. An increase in the amount of money in the nation usually leads to higher prices, *except*
- A. when there is widespread unemployment of men and machines.
  - B. when labor unions are strong.
  - C. when the nation's gold reserves are adequate.
  - D. in periods of general prosperity.
33. When chartered banks increase their loans to businesses and consumers, the result is
- A. a decrease in the spending power of consumers and businesses.
  - B. an increase in the nation's money supply.
  - C. an increase in government control over the economy.
  - D. an increase in the banks' excess reserves.
34. In an inflationary period an appropriate policy for the Bank of Canada would be to
- A. sell government securities on the open market.
  - B. lower legal reserve requirements.
  - C. decrease the discount rate.
  - D. encourage member banks to increase their loans.
35. Which of the following groups is typically hurt the most by inflation?
- A. Farmers
  - B. Debtors
  - C. Government bond holders
  - D. Businessmen
36. Assume our economy is operating at full capacity. Of the following policies, which one would *not* be appropriate to increase our rate of economic growth?
- A. Encouraging an increase of private savings and investment in capital goods and equipment
  - B. Improving the skill and knowledge of people through increased education
  - C. Developing technology and managerial ability
  - D. Encouraging an increase in personal consumption
37. If total demand declines, relative to the productive capacity of the economy,
- A. the growth rate is likely to slow down, at least temporarily.
  - B. inflation is likely to occur.
  - C. a large government budgetary surplus is likely to occur.
  - D. employment is likely to increase.

38. The average per capita income of two-thirds of the world's population in the so-called underdeveloped nations is
- A. less than one-tenth of ours.
  - B. about one-quarter of ours.
  - C. about one-half of ours.
  - D. about three-fourths of ours.
39. The most general cause of low individual incomes in Canada is
- A. lack of valuable productive services to sell.
  - B. unwillingness to work.
  - C. automation.
  - D. discrimination against non-union employees.
40. In Canada during the present century
- A. inequality in personal incomes has been largely eliminated.
  - B. the rich have become richer and the poor poorer.
  - C. average real family income after taxes has remained generally unchanged.
  - D. income inequality has been somewhat reduced.
41. High wages in Canada are based on the high productivity of Canadian labor. All of the following contribute to this high productivity *except* which one?
- A. The skill and work habits of Canadian labor ~~labor~~
  - B. Our accumulation of a large stock of capital goods
  - C. Our technological and managerial advances
  - D. Tariff protection from competition of low-paid foreign workers
42. Featherbedding by unions and monopolistic practices by employers are *both* likely to result in
- A. an increase in average labor productivity for the nation as a whole.
  - B. a less efficient use of resources.
  - C. less labor being used in the industry affected.
  - D. a raising of average real wages in the nation as a whole.
43. Which of the following has been the most obvious result of our governmental policy toward agriculture?
- A. The average farm income has been raised almost to the level of the average nonfarm income.
  - B. Large surpluses of farm commodities have been accumulated by the government.
  - C. Capital and labor have turned to agriculture to take advantage of guaranteed high prices and profits.
  - D. The family farm has been almost completely replaced by the large corporate farm.
44. Measures to increase economic security against unemployment will tend to increase economic efficiency if
- A. one cannot transfer to better paying jobs offered by other employers, to be eligible for benefits.
  - B. the security the measure provides tends to reduce one's incentive to produce.
  - C. the costs of the measures are borne equally by firms regardless of their record for causing economic insecurity.
  - D. the average output per worker is increased, as a result of improved economic security.



FIGURE 1 GROSS NATIONAL PRODUCT, PRICES,  
AND UNEMPLOYMENT, 1930 - PRESENT



Source: *Economic Report of the President, 1963*

45. In the United States, *in contrast* to the U.S.S.R. (Russia),
- A. the problem of scarcity has been eliminated.
  - B. consumer spending largely determines what commodities are produced.
  - C. incomes are unequally distributed.
  - D. government plays an insignificant role in economic life.
46. Which of the following characterizes the economic system in the U.S.S.R. (Russia)?
- A. The average standard of living is declining.
  - B. The level of investment is based entirely on military needs.
  - C. Economic growth depends upon the diversion of resources from consumption to investment.
  - D. Central planning has eliminated all need for prices on goods and services.
47. When compared with the United States economy, the democratic socialist economies of the United Kingdom, the Scandinavian countries, and India
- A. are considerably more productive.
  - B. have more government ownership and control of their economies.
  - C. demonstrate clearly that only private enterprise is compatible with democracy.
  - D. have been short-lived, for in two of the cases socialism has been abandoned.
48. The American people desire a growing economy in which the price level is stable and employment reasonably high. Figure 1 on page 12 shows that they have most fully approximated this ideal between
- A. 1937 and 1938.
  - B. 1940 and 1941.
  - C. 1946 and 1947.
  - D. 1955 and 1956.
49. Judging from your inspection of the three charts, which one of the following seems to be the most serious economic problem of the immediate postwar period in the United States (1945–49)?
- A. Decline in the output of the economy
  - B. Inflation
  - C. Unemployment
  - D. A falling gross national product
50. On the charts note the behaviour of the economy in the United States between 1950 and 1953. Try to determine the approximate monetary and fiscal policies for these years. Which one of the following four statements most correctly analyzes the situation?
- A. The GNP is moving to an all-time high and prices are stable. No change in policy is called for.
  - B. Unemployment is rising. A budgetary deficit and/or an easy money policy is called for.
  - C. It is a period of inflation. A budgetary surplus and/or a tight money policy is called for.
  - D. Employment is falling and prices are rising. Therefore a budgetary deficit and/or a tight money policy is called for.





## APPENDIX D



TEST OF ECONOMIC UNDERSTANDING  
Form B - Canadian Revision

Directions to the Examiner

First pass out the answer sheets and instruct the students to fill in the identification information blanks. As soon as they have finished, pass out the booklets.

When everyone has received a test booklet, say:

"Read to yourself as I read aloud the directions on page 1."

"This test is designed to measure your understanding of economics. Not all students will have taken a formal course in economics, but most have learned something about the subject in their regular courses, through reading, listening to the radio, or watching television. These questions will measure how well you understand the principles of economics and the way our economy operates. It is probable that you will not know the answers to some questions. However, you should answer every question by marking what you think is the best choice, using the information you do have in selecting your answer. Work at a comfortable speed, but do not spend too much time on any one item."

"The test consists of fifty questions or incomplete statements, for each of which you are to choose the one best answer. Even though in some instances more than one answer may appear to be correct, your task is to choose the best answer. After you have read the question and chosen your answer, use your pencil to blacken the space on the answer sheet that corresponds to the answer you have chosen. Now read the sample questions below and mark your answers on the answer sheet."

When the students have finished reading the directions and marking the samples, say:

"Sample 1 on your answer sheet is an example of a properly marked answer. Notice that the space between the lines of response B has been clearly filled in. Check to see whether you marked response A for Sample 2 on your answer sheet, and response D for Sample 3."

"If you finish the test before the time is called, go back and check your answers. If you have any questions, raise your hand now. No questions will be answered after the test has begun."

"You will have an hour for the test. Make no marks in your test booklets. All right, begin."

During the first few minutes of the test, check to make sure that students are marking their answer sheets properly.

When testing is completed, collect the test booklets and answer sheets.













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